Learning to Hunt

Hosting a hunting-based outdoor skills event in your community

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Wisconsin
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Credits

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Station 15

With Stick and String

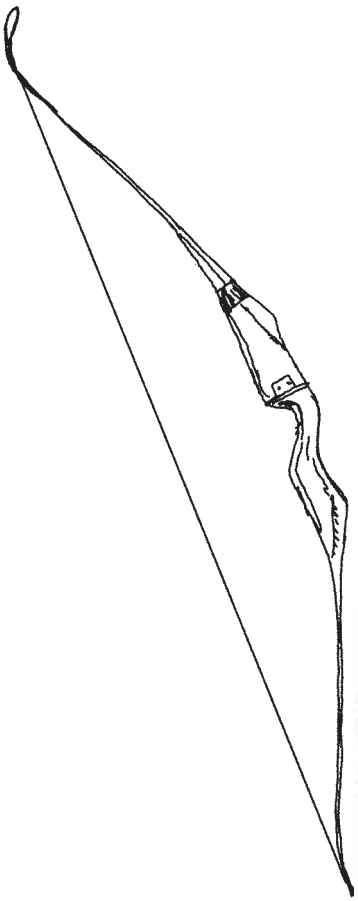
With Stick & String

Bowhunting basics

Participants learn the basic parts of bows and arrows. They try their hand at shooting a recurve or compound bow and learn some techniques for hunting deer.

Station 15

With Stick and String



Objectives

Participants shall:

describe the difference between a recurve bow, longbow and compound bow.

demonstrate the safe and accurate use of a recurve or compound bow.

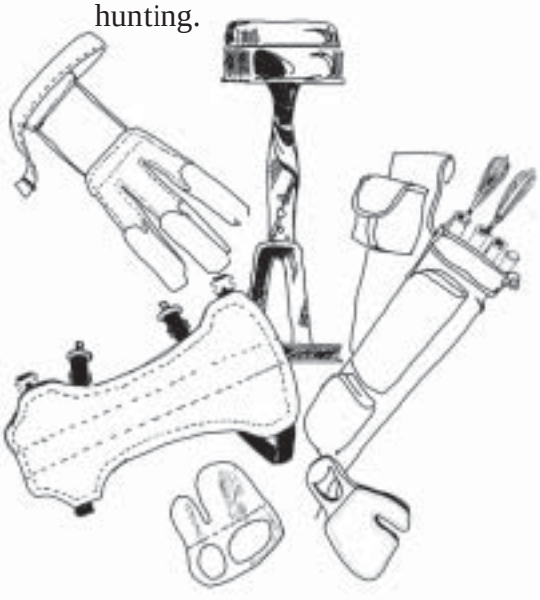
recite five of the bowhunting safety rules for target practice.

demonstrate how to maintain broadhead arrow tips.

describe the importance of shot placement and shooting skills.

describe how to track a deer that's been hit with an arrow.

explain the steps in preparing archery equipment for field hunting.



Equipment

Bows– recurve, longbow, compound, in various weights
Arrows of various types
Arm guards, finger tabs or finger gloves, quivers
Hunting arrowheads – blunt, target, broadhead, fixed and replaceable
Sharpening tools – small mill file, razor strop, stiff strip of leather, flat piece of wood, rubber bands
Examples of camouflage clothing – leaf and bark patterns
Camouflage materials for bows and arrows – camouflage gun sock, dull primer, crayons
Game recovery aids— engineer's tape, strips of toilet paper or facial tissue
Portable tree stands with safety harnesses
8 or more 3-D white-tailed deer targets
Backstop net, if available
Ball of string or twine and several wooden stakes or laths
Large table (picnic table)
International Bowhunter Education Manual (contact: National Bowhunter Education Foundation, Route 6, Box 199 Murray, KY 42071)

Station 15

With Stick and String

Station Setup

Set up a large table with bows, arrows, arrowheads and sharpening tools for display and demonstration. Erect tree stands safely.

Set up an archery shooting range. Be sure the sun is not in the bowhunter's eyes (face range north, if possible). Use a string or twine to mark off a shooting line. Place the string two to three inches above the ground, tied to stakes. Set up five or more shooting stations with deer targets set out at 10 yards from the shooting line. Set up one shooting station with the target at 20 yards, another station with the target at 30 yards and a final station with the target set at 40 yards. Use a ratio of one target for every four participants. Clear the area between the bowhunters and the targets. Check to ensure that the area 30 yards beyond the targets and to the side of the targets is clear so that no one can wander into the area without being seen. Block off any entries into the shooting zone. A backstop net is useful because it stops arrows that miss the target and reduces arrow breakage. A dirt bank makes a good backstop but it must be high enough that arrows don't fly over the bank.

Background Information

Bow hunting is becoming increasingly popular in the United States, with over 2 million avid bow hunters currently pursuing their sport. Most states have special bow hunting seasons. Of all the hunting sports, bow hunting is the one that most requires special shooting skills and strengths, as well as the ability to get really close to game.

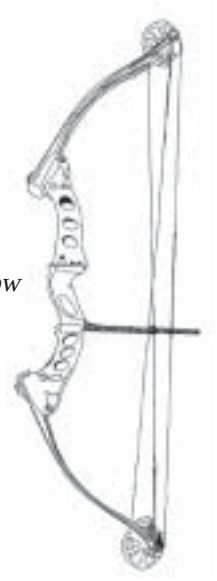
Instructors should brush up on some basic information by reviewing the **International Bowhunter Education Manual.** Also, review the basic terms below related to archery and bowhunting.

Bow Designs

Three basic types of bows are used in hunting—the **compound, recurve** and **long bow**. Depending on the type, a typical bow will have a pair of limbs, a handle section, strings or cables and may include a site and arrow rest. While the makes, models and materials may vary, all bows work on the principal of storing energy in the limbs and transferring that energy to an arrow when the string or cable is released. A **compound bow** is the most advanced design. It has a system of pulleys that help minimize finger strain and muscle fatigue when a bowhunter fully draws the bow back. A compound

Long Bow

Recurve Bow

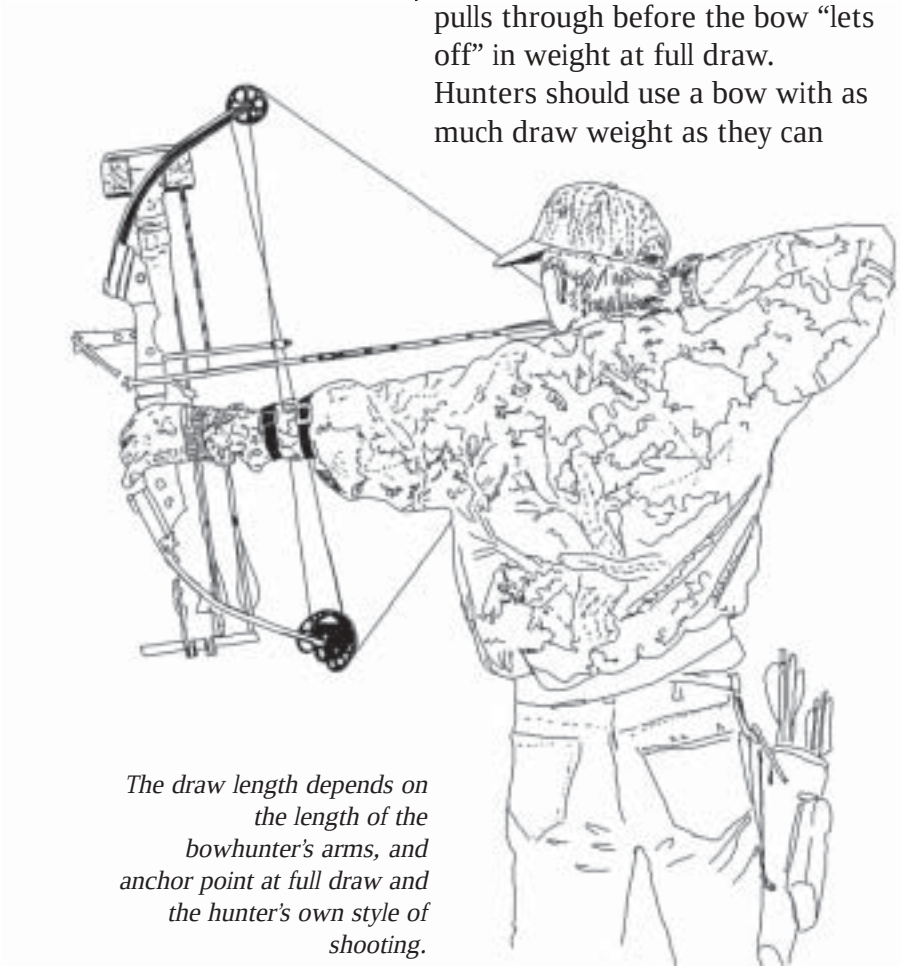


Compound Bow

bow shoots faster than a recurve or long bow, which keeps the arrow traveling in a flatter trajectory.

Draw Weight

The draw weight of a recurve bow is the number of pounds of force it takes to draw the bow string back to full draw, or 28 inches. For each inch of draw above or below 28 inches, add or subtract two pounds of bow weight to determine the approximate weight of the bowhunter's personal draw. For compound bows, draw weight is the same as peak weight – the amount of weight the bowhunter pulls through before the bow "lets off" in weight at full draw. Hunters should use a bow with as much draw weight as they can shoot comfortably. The heavier the draw weight, the heavier the arrow that can be shot. This in turn provides better penetration of the animal being hunted. Also, a faster arrow means less chance the animal can jump or dodge the arrow. For deer hunting, the minimum recommended draw weight for a compound bow is 50-55 pounds.



The draw length depends on the length of the bowhunter's arms, and anchor point at full draw and the hunter's own style of shooting.

Draw Length

The draw length of a bow is the distance a bowhunter has to draw his or her arrow back before shooting. This length is measured from the bottom of the string groove in the nock of the arrow to the front or far side of the bow, when the bow is pulled back at full draw. This length depends upon the length of the bowhunter's arms, the anchor point where the bowhunter rests the nock of the arrow when at full draw, and the hunter's own style of shooting.

Arrow Shafts

Arrow shafts are made from various materials: wood, aluminum and fiberglass being very common types. Wood shafts, of course, are the most traditional. They are not as heavy and they cost less than other materials. Their light weight gives them a flat trajectory. Aluminum arrows are lighter than fiberglass also giving them a flat trajectory. They are completely waterproof. Their wide range of weights and stiffness provides

bowhunters with great versatility. Fiberglass arrows have the advantage that they do not warp in wet weather and very seldom break or shatter unless they hit a rock. They are heavier than aluminum or wood, resulting in an arching trajectory. Their added weight, however, makes them penetrate an animal better.

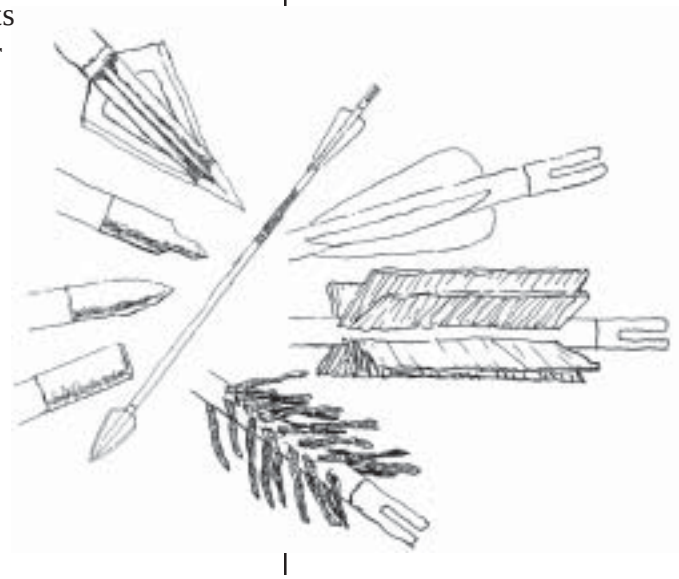
Fletching

The fletching of an arrow refers to the feathers or plastic vanes on the back end of the arrow shaft. The standard arrow comes with three feathers or vanes about five inches long. These vanes serve to stabilize the arrow as it flies through the air. The smaller the fletching, the faster it flies, though it becomes less stabilized. Flu-flu fletching has longer feathers (about one inch high) that slow the arrow down quite fast. These are used for squirrel or bird hunting. They don't get lost as easily and are safer because they don't fly as far as standard arrows. Advantages of feather fletching include that they are more forgiving of release errors, have greater stabilizing influence, and are adaptable to all types of bows. Disadvantages of feathers are greater drag, reduced arrow speed, more noise in flight, and susceptibility to weather. Synthetic vanes offer more speed, are more sensitive to release, are quieter in flight and require an arrow rest.

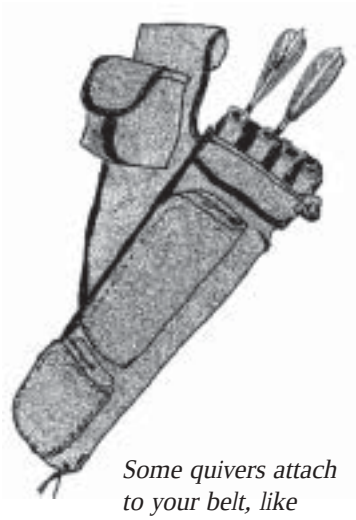
Arrowheads

Arrows are tipped with heads…the part that enters the target or animal. Field points are simple, rugged steel points used for target practice or shooting squirrels or small gamebirds. Broadheads are razor sharp tips with two to six cutting edges used to hunt big game, small game and turkeys. Most bowhunters prefer three blades to ensure quick, humane kills. Blunt tips are flat-nosed arrowheads made of steel or rubber. They are used to "stump-shoot" and hunt squirrels, rabbits and smaller gamebirds. Blunts work well for field practice because they either bounce off or shallowly penetrate wood, and never get wedged into wood tightly like field points and broadheads sometimes do.

Arrowheads are either glued onto the arrow shaft with hotmelt ferrule cement or screwed in with a special point adapter system that lets the bowhunter conveniently exchange arrowheads in seconds.



Arrows, arrowheads and fletching come in all different shapes, sizes and styles.



Some quivers attach to your belt, like this model.

Quivers

Quivers are the containers that hold arrows. Quivers designed to hold broadheads come with a protective cover to prevent the bowhunter from getting seriously cut on the sharp blades. Quivers come in a variety of styles: back quivers, hip quivers and bow quivers. Most bowhunters prefer bow quivers that clip directly to a bow. This provides easy, quick and noiseless access to the arrows. They are easy to carry through brushy areas and have excellent maneuverability.

Clothing

Bowhunters need to hide from the game they hunt, because they must wait until the animals are quite close before releasing the bow. Camouflage clothing helps bowhunters hide from game because the cloth coloring helps them blend in with their surroundings. Leaf and bark camouflage patterns are good choices for hunting in woods, depending on whether there are leaves on the trees. Surprisingly, contrasting colored plaids like a black-and-red plaid shirt blend in well too. A bare, shiny face is quite noticeable against a dark outdoor background. Hunters should use a camouflage head net or camouflage face paint to prevent this contrast.

Whatever the color pattern, the field clothing must be soft and quiet to avoid alerting animals to the bowhunter's presence. Wool and soft cotton are extremely quiet fabrics. Boots should be soft-soled for silence and dull-colored for camouflage. Bowhunters should match their clothes to the weather. Waterproof rain gear or woolen garments work well in rainy weather. When the weather is cool in the morning but warms by mid-day, layered clothing is best. Clothing must not interfere with the bow while shooting. A baggy sleeve will catch a bowstring and ruin shooting accuracy. Hats should not interfere when the bow is pulled back to full draw.

Choose your clothing well. Make sure it is made from soft, quiet fabric and that the camo pattern matches your surroundings.

Preparing Your Equipment for the Field

Bows that are noisy or flashy colored will attract a deer's attention. Camouflage paint or a camouflage sock can be used to dull down the bow and quiver. Dull lacquer or primer will prevent arrow shafts from reflecting light. Light-colored bowstrings can be darkened with green or brown crayons. Movable metal parts should be lubricated with WD-40 or other lubricating oil.

Bowhunting Safety Rules for the Target Range

1. Shoot only at your target.
2. Never draw or shoot your bow when anyone is between you and your target.
3. Always be sure the area behind your target is clear, or has an adequate backstop.
4. When you are done shooting your arrows, put your bow down on the ground and wait for others on the range to finish shooting their arrows. When everyone's bow is on the ground, all archers may proceed out onto the range to retrieve their arrows.
5. Never shoot up into the air or in any direction where you might destroy property or endanger life.
6. Never draw and release your bowstring without an arrow in it. This is called dry firing, and can damage your bow or ruin it completely, and might hurt you, too.
7. Be sure your bow and arrows are properly matched to each other. Mismatched arrows can damage your bows and will result in erratic and inconsistent performance.
8. Your bow's draw weight and draw length should be matched to your physical abilities.
9. Be sure your arrows are of the correct length and stiffness for your bow.
10. Be sure to account for all your arrows when target practicing or hunting. Razor sharp arrows are dangerous if encountered unexpectedly.
11. Always cover sharp edges of hunting arrows with a protective hood to safeguard both your equipment and you.

Station 15

With Stick and String

Bow and Arrow Basics

Activity A

Procedure

Display and discuss the various types of bowhunting equipment: recurve bows, compound bows, longbows, arrows, types of arrowheads, quivers, arm guards, finger tabs, finger gloves, and camouflaged clothing. Point out the various parts of each piece of equipment. Discuss some of the pros and cons of each type of equipment or piece of apparel.

Using the accompanying illustrations as a guide, point out the various parts of each piece of equipment. Or you can enlarge these illustrations on a copy machine and hand the copies out for discussion.

Hand out bows and quivers of arrows. Have participants put the quivers in a safe spot. Demonstrate how to draw back and let down a bow without using an arrow (see steps below). Explain what dry firing is and warn your participants to be careful not to dry fire. Next, allow participants to draw back the bowstring and then carefully let down the string on several types of bows. Continue to remind them not to dry fire their bows. This will damage the bow! Ask them to discuss the advantages and disadvantages associated with each type of bow. This will help show that selecting a bow is a personal choice with many different factors to be considered. Stress that the over-riding factor involves the ethical requirement that the equipment has to be adequate to bring about a quick, clean kill of the animal being hunted.

Discuss how the compound bow has a system of pulleys that help minimize finger strain and muscle fatigue when a bowhunter draws the bow back. A compound bow shoots faster than a recurve, which keeps the arrow traveling in a flatter trajectory. If the poundage rating of the compound bows is too high, younger participants may not be able to pull the string back. You will then have to demonstrate how to use the bow.

Discuss the different types of arrow shafts, their advantages and disadvantages.

Display some standard fletching patterns, including three and four vane styles in straight, offset and helical patterns as well as one

or more flu-flu designs. Discuss the different types of fletching and the reasons for using the various types, including personal preference. Compare the offset and helical fletching patterns to rifling in a rifle barrel and the stabilizing effect of spinning the projectile in flight. Discuss the advantages and disadvantages of feathers versus synthetic vanes. Compare the fletching surfaces on target and hunting arrows. Ask the participants to speculate about the differences in fletching. Be sure to discuss the mass of the hunting head and slight variations in shooting form or style.

Pass around examples of various types of hunting and practice arrowheads. Be sure to include both small game and big game arrowheads. Warn participants that broadhead points are razor sharp. They must handle them with extreme caution. Point out the use of steel or rubber blunt heads in both target practice and small game hunting. Comment on the convenience of screw-in points and stress the importance of lubricating the threads to prevent them from corroding. Stress the importance of setting up the bow for broadhead performance, then selecting other points to match the behavior of the hunting shafts.

Next, have participants brainstorm the functions of bowhunting quivers. Stress protection of the broadhead and the shooter, minimizing noise and convenience. Display a variety of quivers, commenting on advantages and disadvantages of each.

Show game recovery aids, like engineer's tape, toilet paper or facial tissue. Discuss their use and removal.

Display and discuss several types of camouflage patterns useful in your area. Consider doing a camouflage game with the group. Stress the significance of covering the face and hands. Comment on the value of the shadow created by the hat brim in hiding the eyes and face.

Use a fully equipped bow hunter to demonstrate the need for adequate cargo space and storage space for bow hunting gear.

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Activity B

Broadhead Maintenance

Procedure

Point out that broadhead arrow tips must be razor sharp. This cannot be stressed enough. A broadhead must sharply, cleanly and quickly slice tough hide, muscle and blood vessels to promote hemorrhage for quick, humane kills. Many broadhead designs need to be sharpened before the hunt. There are a number of methods for testing the sharpness of hand-sharpened and pre-sharpened broadheads. Illustrate the action of dull and sharp broadheads using the following methods:

❑ Drag each edge carefully across your thumbnail. If all edges "bite" or "grab" your nail, instead of sliding smoothly over it, the broadhead is sharp enough.

Test sharpness of broadhead by carefully sliding the edge over your thumbnail.

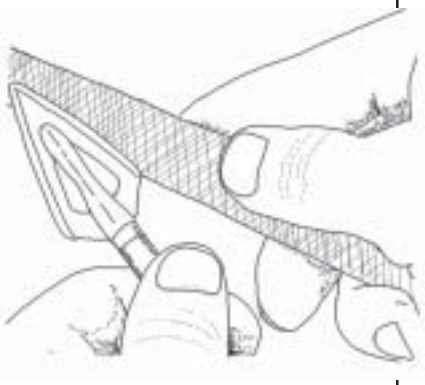
Another test for the sharpness of a broadhead blade is to lightly drag it across a taught rubber band.

❑ Place a medium-sized rubber band between the thumb and index finger of your left hand, stretching it slightly. Hold the shaft of the arrow loosely in your right hand. Exerting no pressure from your arrow hand, slide the broadhead edge across the rubber band. If the edge slices all the way through the rubber band, it is sharp enough to hunt with. Carefully attempt to shave a few hairs from your arm with each edge. If an edge shaves, it's ready to use on game. This is one of the oldest and most widely used sharpness tests.

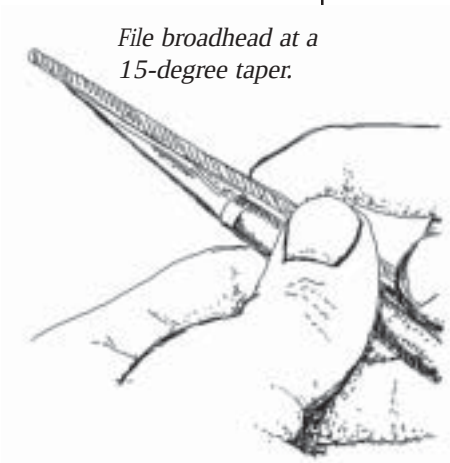
Demonstrate proper broadhead sharpening technique on a simple two or three blade design and allow participants to practice in small groups. Emphasize the need for and importance of a razor edge without notches, teeth or other jagged edges and discuss the merits of fixed and replaceable blades. Demonstrate the steps in sharpening a broadhead:

❏ Attach a broadhead to each arrow shaft.

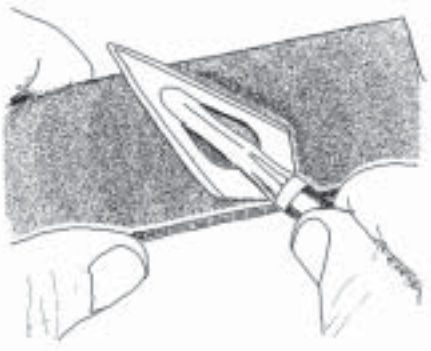
❏ Using the arrow shaft as a handle, file a 15-degree taper on each side of each broadhead blade with a small mill file. Use the ferrule of the broadhead or a clamp-on sharpening guide to achieve this correct taper angle. Bring each blade to a fairly sharp edge with the file, then run the file backwards along each edge taper to remove any large steel burrs.



File broadhead at a 15-degree taper.

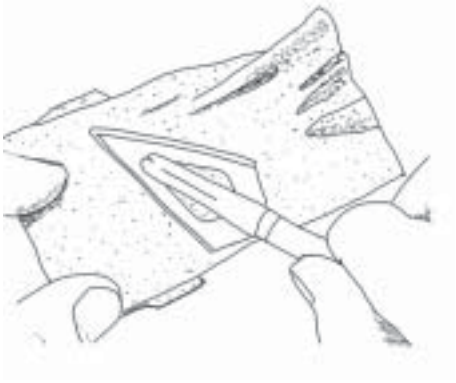


❏ Using a knife-sharpening stone, carefully hone both sides of each edge, retaining the original edge taper. The stone should be placed on a solid surface like a tabletop, and the broadhead edge repeatedly stroked away from you with firm, even pressure.



Hone broadhead on a knife-sharpening Arkansas stone.

❏ Strop the blades to remove any small honing burrs on the edges. Do this by briskly stroking each edge taper several times backwards along a razor strop, stiff strip of leather, or flat piece of wood. Don't push the blades forward into the stropping surface. This will cut the stropping material and may dull the broadhead.



Remove burrs by stroking blade on a leather strop.

Tell your participants that sharpening broadheads takes time and skill. An expert sharpener will spend at least 15 minutes on a four-blade broadhead before the head is keen enough to hunt with.

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With Stick and String

Activity C

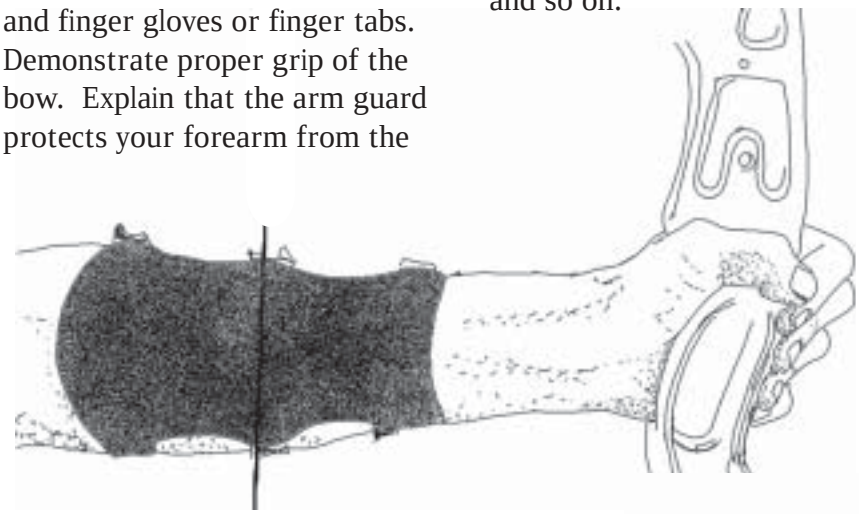
Bowhunting Practice

Procedure

Place groups of four participants at the shooting line behind each assigned target. Have them sit down behind the shooting line.

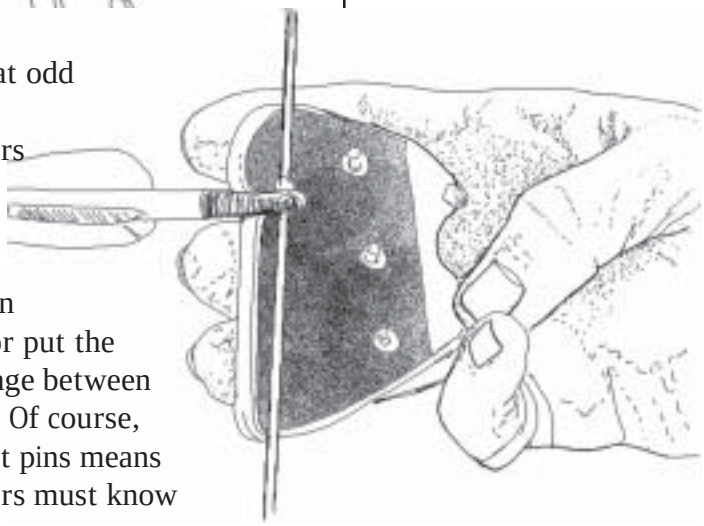
Review the safety rules listed in the background section.

Demonstrate the use of armguards and finger gloves or finger tabs. Demonstrate proper grip of the bow. Explain that the arm guard protects your forearm from the sting of a bowstring and also keeps your shirt or jacket sleeve away from the bowstring to ensure accuracy and prevent noisy string slap. Finger tabs and gloves protect fingers from blistering as well as ensure a smooth, accurate string release.



Explain that bowhunters may shoot either by basic instinct or with bow sights. Shooting instinctively comes with practice. The appropriate elevation to put the arrow in the target is sensed subconsciously rather than determined through conscious effort. Plenty of practice gives the right "feel" for accurate aiming. An alternative to shooting instinctively is to use bow sights. These are movable sight pins placed at different locations on the bow to correspond to different shooting distances. The first, and highest, pin might be set for shooting at 20 yards, the second one for 30, the third for 40 and so on.

To shoot at odd distances, bowhunters must aim high on one pin and low on another, or put the target image between two pins. Of course, using sight pins means bowhunters must know



A proper stance is relaxed, with feet about 90 degrees to the target.

how to estimate range, or they will need to purchase and use a commercial range finder.

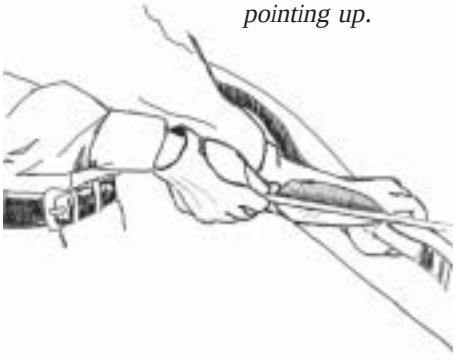
Now, demonstrate the following steps of shooting, with all participants in the safety area behind the line.

Stance: Stand with your feet about 90 degrees to the target. Your toes should touch an imaginary line drawn between you and the target. Spread your feet comfortably, about a shoulder width apart. Shift your weight evenly between the balls of your feet. Stand with your knees relaxed and not locked. Relax and keep very still as you prepare to shoot.

Nocking: Turn the bow to one side. Lay the arrow on the arrow rest. Place the string in the arrow's nock groove under the nocking point on the string. The index feather (the one colored differently than the other feathers) should be pointing away (up) from the bow. Grasp the string in the first joint of the fingers, with index finger above the arrow and the second and third finger below the arrow. Your fingers should be curled well around the string but the back of your hand should be flat from the first knuckle to the wrist.

Extend: Fully extend your bow arm at shoulder level toward the target. Allow the bowstring to roll slightly in your string fingers to keep the arrow on the arrow rest. Your elbow joint should be turned outward away from the path of the bowstring. Your shoulders should be level. Center the pressure on the bow at the "Y" formed by the thumb and index finger of the bow hand.

Draw: With your left (bow) shoulder pushing and the right (arrow/string) shoulder pulling, move your right elbow straight back until the string touches your anchor point. Your bow should be kept vertical and your bow arm straight. Your string arm should have its elbow raised and held out about 90 degrees from the vertical axis of your body.



Nock the arrow, with the colored index feather pointing up.

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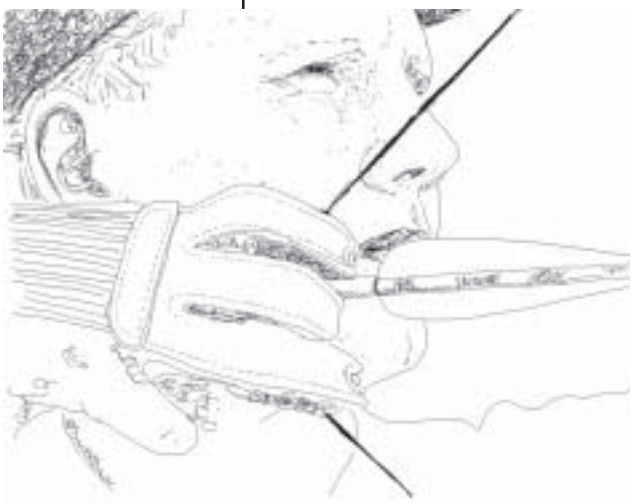
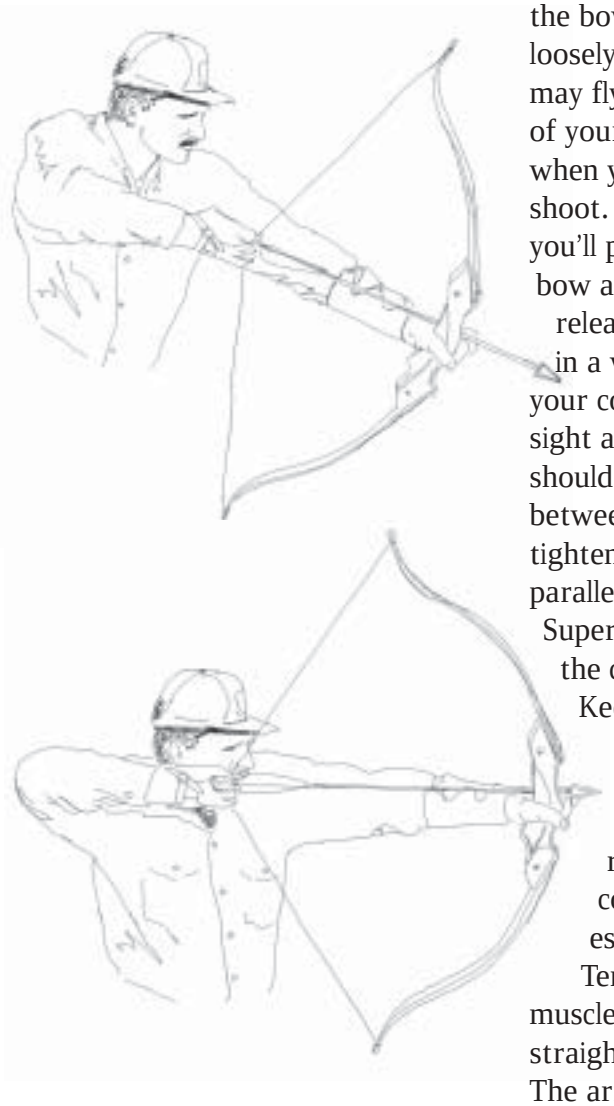
With Stick and String

Anchor: Anchoring means placing your bowstring hand firmly against your face so your head is in the same place in relation to the bow and arrow on every shot. There are two ways of anchoring the bowstring. In the first method you bring the bowstring to the center of the nose and chin with your index finger touching under the center of your chin. Most bowhunters, however, opt to bring the index finger of the string hand back into the corner of your mouth.

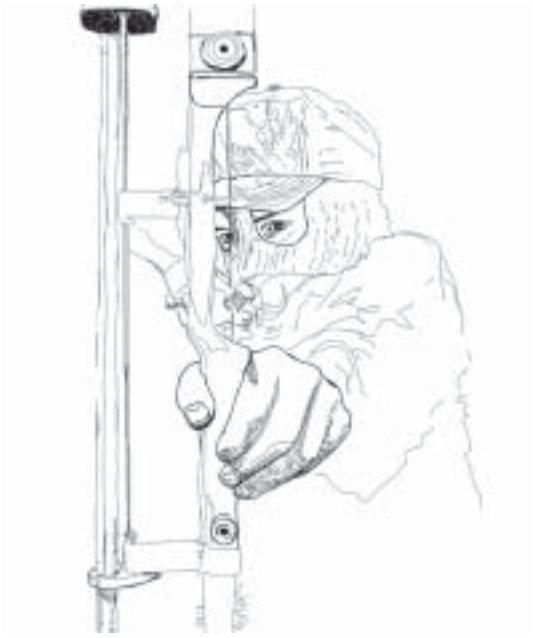


For best target accuracy, anchor the arrow, each time, firmly to the same place on your check, chin or lips.



Hold, Tighten and Aim: Hold the bow firmly but don't squeeze it too hard. If you grasp the bow too loosely, it may fly out of your hand when you shoot. If you grip it too tightly you'll probably "throw" your bow arm to the side when you release the string, resulting in a wild shot. Now shift your concentration to the bow sight and your target. You should feel the muscles between your shoulder blades tighten. Both arms should be parallel to the ground. Superimpose the sight over the center of the target. Keep both eyes open.

Release: Keeping your back muscles tightened, relax your draw hand completely until the string escapes from the hand. Tension in your back muscles pulls the draw hand straight back along the neck. The arrow is launched. A



When aiming at your target, hold yourself as still and steady as possible.

smooth, relaxed release is one key to good shooting.

Follow Through: With the arrow now in flight, hold your stance in precisely the same position as it was before the release until the arrow hits the target. Keep your eye on the target. The bow will recoil to the side, but not until the arrow is out of the bow and on its way.

At this stage, have one participant from each team step up to the stations at the shooting line where each target has been placed at 10 yards. Ask your participants to mimic each step of shooting as outlined above, without using any equipment. Now have them pick up their bow and arrow and once again mimic the steps of shooting, without release of the arrow. Have one member of each team nock an arrow at the shooting line. Talk them slowly through the steps of shooting. Emphasize that if they omit any step, problems will result. Emphasize the danger of an arrow prematurely leaving the rest. Ask their partners to check to make sure the string will clear the shooter's elbow. Tell those participants who have a hard time keeping an arrow on the arrow rest to let down the draw and start the draw over again. Make sure they all have a good anchor. When they are ready, they may release their arrow toward the target.

Talk the bowhunters through four more arrows. After all arrows have been shot, ask the shooters

to put their bows down, step back from the line. Discuss the proper way to go to the target. Give them the signal to retrieve (two whistles or the word "retrieve"). Have everyone gather at one target. Demonstrate the proper way to retrieve arrows from the target.

Allow time for participants to practice using recurve or compound bows to shoot at white-tailed deer targets. Keep reinforcing the target range safety rules.

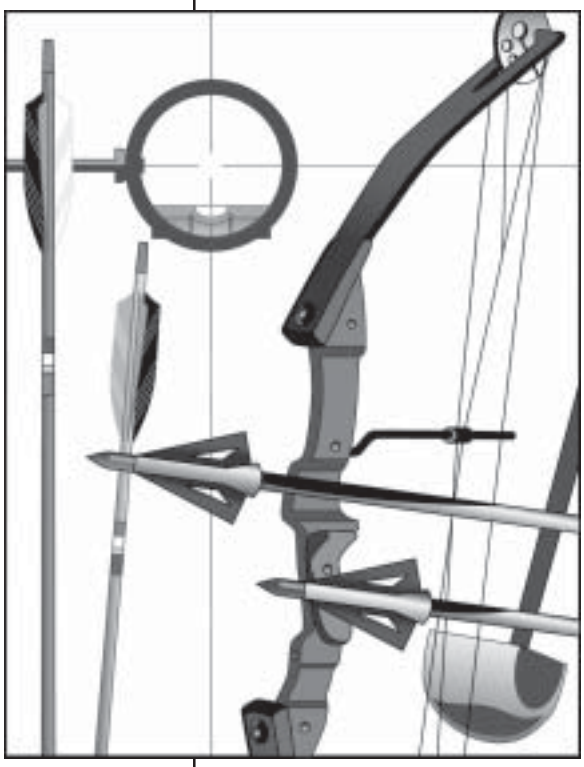
After participants have had an opportunity to shoot at the deer targets at 10 yards, they can proceed to test their skills at stations 6, 7 and 8. Here they can aim at the deer targets placed at 20, 30 and 40 yards, respectively. They will discover that it is much more difficult to shoot a deer at these distances.

Also, for more practice, have participants climb the tree stands and shoot the targets while strapped into the tree stand.

Retrieving Wounded Deer

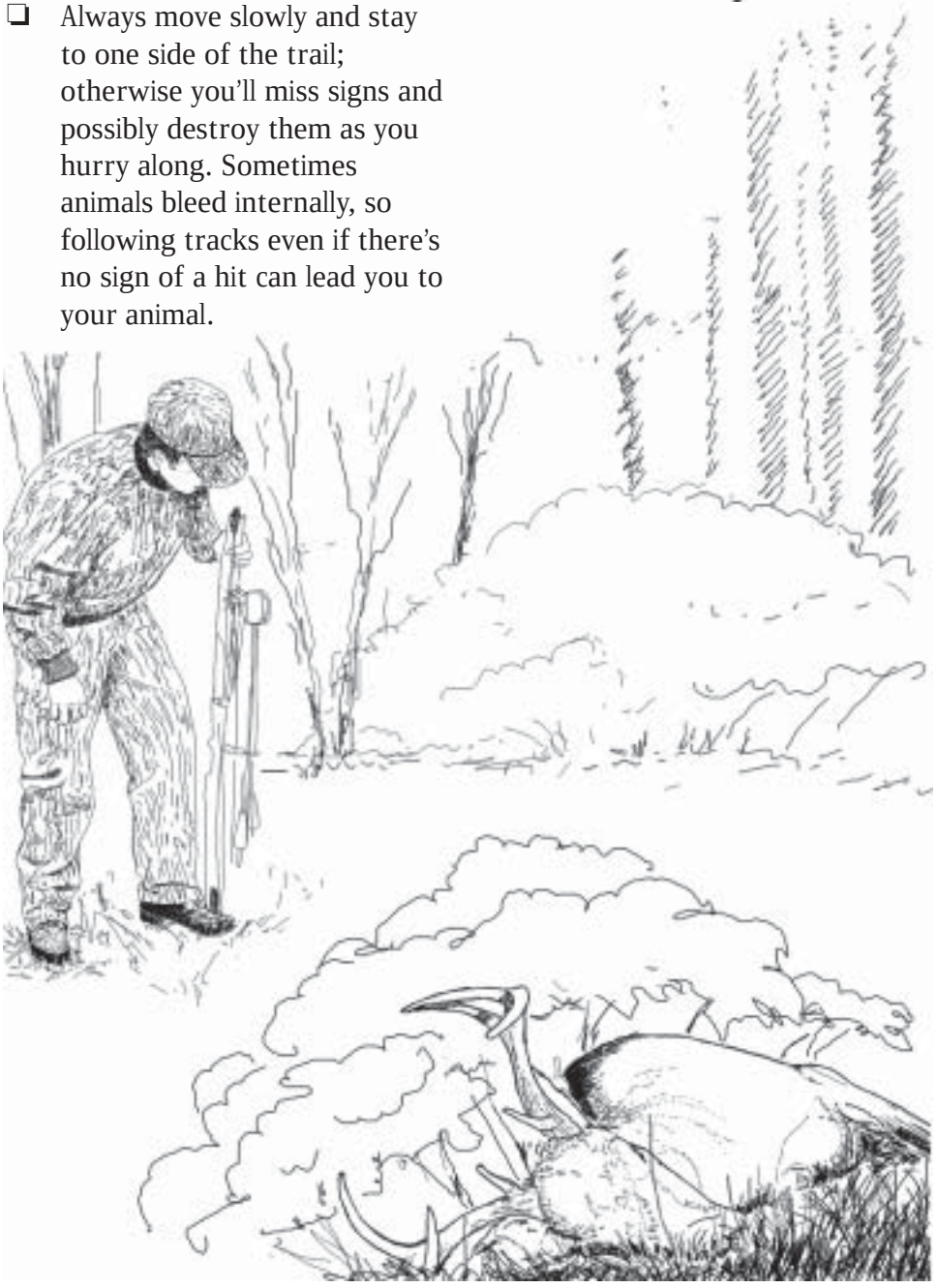
After participants have had an opportunity to shoot at deer targets, explain the procedures involved in real world hunting when a wounded deer must be trailed and retrieved.

Tell your participants that a bow and arrow is a humane method of hunting that has been used for thousands of years to take game. A sharp broadhead kills quickly, but doesn't usually knock an animal down on the spot. If you score a hit and your animal races out of sight, it's wise to wait a few minutes before following the trail. Many hunters – both gun hunters and bow hunters – automatically wait 30 minutes before following an animal that doesn't drop in its tracks. After this short wait, carefully track your animal down, following these helpful trailing tips:



- ❏ Mark blood spots with engineering tape, toilet paper or facial tissue so the spots are easy to find if you lose the trail. Be a responsible hunter and pick these up after you've found and tagged your deer.
- ❏ Always move slowly and stay to one side of the trail; otherwise you'll miss signs and possibly destroy them as you hurry along. Sometimes animals bleed internally, so following tracks even if there's no sign of a hit can lead you to your animal.
- ❏ Be persistent. Never leave the scene of a possible hit until you are certain that the game is unharmed or has survived a non-fatal hit.

End of Teaching Station



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